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ABSTRACT

In 1985-1987, seven faculty members at Sacramento City College (SCC), California, conducted classroom-based research studies as part of an effort by the college to involve faculty directly in research as a means to improve teaching and learning. In 1987-88, three follow-up studies were conducted to validate and/or expand upon the original research. This monograph contains the three reports undertaken as follow-up studies. The first study, "Integrating Content Area, Study, and Writing Skills Instruction: Follow-up Study," by Robert T. Carroll, was unable to find any significant effect on learning outcomes (as measured by exam scores and retention rates) attributable to the introduction of study and writing skills instruction into a philosophy class. The second report, "Logarithms and the Hand Held Calculator," by Ronald Hatton, indicates that no significant difference was found between students using hand-held calculators and students working free-hand, in their ability to perform exponential and logarithmic functions in one out of three cases. The final study, "Combined Reading and Writing Instruction," by Delbert L. Prescott, examined skills improvement among a group of students reading below the seventh grade level to determine whether: (1) writing instruction improved reading skills; (2) reading instruction improved reading skills; and (3) combining reading and writing improved retention rates and promoted advancement. Improvement was found in all areas except reading comprehension. Evaluation instruments and the original program budget proposal are included. (JMC)

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SACRAMENTO CITY COLLEGE
STAFF DEVELOPMENT PROJECT
CLASSROOM BASED RESEARCH
FINAL REPORT

FUNDED IN PART BY THE SACRAMENTO CITY COLLEGE
STAFF DEVELOPMENT COMMITTEE
JUNE 1988

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JC 900 510

SACRAMENTO CITY COLLEGE
STAFF DEVELOPMENT PROJECT

CLASSROOM BASED RESEARCH

FOREWORD

This report on Classroom Based Research represents the final results of a project, supported in part by the Sacramento City College Staff Development Committee, and conducted at Sacramento City College during 1987-88. The purpose of this project was to conduct three follow-up classroom based research studies from seven, which were originally carried out under a Fund for Instructional Improvement grant during 1985-87.

The intent of classroom based research is direct faculty participation in research to improve teaching and learning. It is based on the premise that instructors in the classroom do have the opportunity, through research, to study, analyze, and identify, instructional strategies that improve teaching and learning.

As a result of this staff development project the educational benefits for faculty and students involved in classroom based research have been positive and reinforced as discovered by the original project.

The material presented in this report represents individual and collaborative efforts of the research faculty, research advisor and project director. Each individual study clearly demonstrates the dedication and expertise of faculty concerned with the improvement of teaching and learning.

SACRAMENTO CITY COLLEGE PROJECT
STAFF DEVELOPMENT PROJECT
CLASSROOM BASED RESEARCH

TABLE OF CONTENTS

<u>TOPIC</u>	<u>PAGES</u>
Foreword	i
Staff Development Final Report	1 - 4
Research Reports	
Integrating Content Area, Study and Writing Skills Instruction - Robert T. Carroll	5 - 10
Logarithms and the Hand Held Calculator - Ronald Hatton	11 - 24
Combined Reading and Writing Instruction - Delbert L. Prescott	25 - 38
Evaluation Instrument and Responses	39 - 42
Original Proposal	

CLASSROOM BASED RESEARCH
STAFF DEVELOPMENT PROJECT
FINAL REPORT
1987-1988

DESCRIPTION

The intent of this project was to improve teaching and learning through classroom based research studies. It evolved from a previous project conducted at Sacramento City College (SCC) during 1985-87, funded by the California Community College Fund for Instructional Improvement, which involved seven SCC faculty in a variety of classroom research studies. The project was considered successful and resulted in an internal institutional proposal to the SCC Staff Development Committee for 1987-88 to continue classroom research efforts, which allowed for faculty directed research studies to examine instructional strategies and student learning outcomes.

This project was designed to involve three of the original seven faculty in research as a follow-up to their previous studies. The follow-up studies were to validate and/or expand upon the original research.

These follow-up studies were concerned with 1) the use of carefully prescribed study skills activities in a philosophy and logic course to improve student learning outcomes; 2) the use of a hand held calculator for learning math skills, specifically logarithms; and 3) the combined teaching of reading and writing to improve student learning.

Previous experience with classroom based research reveals a minimum of activity at the community college level. Review of literature indicates that faculty and students may benefit more from teachers actually doing research instead of reading about research. Also, that faculty, as subject experts, are most likely the best qualified to determine what techniques or strategies may be most effective in the classroom.

As it pertains to staff development, this project was concerned with 1) improved student learning through the analysis of teaching strategies and methodologies, which enhance the student's options and opportunities for success and, 2) improved faculty teaching through the study of teaching and learning from a "constructive approach" to research.

So the intent is not only to measure and evaluate student outcomes, but to provide faculty with a new method to measure

their effectiveness based on their own findings. Further, that through classroom research, faculty may evaluate their own performance, techniques, and approaches to the instructional process.

ACTIVITIES

To carry out this project, each research faculty, Robert Carroll, Ronald Hatton, and Delbert Prescott, identified individual research topics which would further develop their previous work. After selecting the area of investigation, their efforts were directed toward establishing a design, developing research questions, determining strategies for instructional delivery and methods for measuring student outcomes, conducting the research activities; then collecting, compiling, and analyzing data, and preparing a final written report.

The research advisor was available for consultation on research design and questions, preparing quantitative formulas, computing statistical data and providing assistance with interpretation and analysis of data. Although available to each of the three research faculty, it is worthwhile to note previous experience of the research faculty varied the amount of time the advisor needed to consult with each individual research faculty. The research advisor was also essential for the final review of the individual research studies and the review and editing of the final report.

The project director was responsible for preparing the staff development proposal and preparing the final report. In addition, the project director participated in discussions with the research faculty and research advisor.

EVALUATION

As proposed in the application, evaluation was to include both process and product. For process, evaluation is concerned with 1) faculty efforts, 2) research assistance, and 3) project coordination. For product, evaluation is directed at what was developed or produced.

RESEARCH FACULTY

In conducting the research studies, each faculty demonstrated consistent and timely expertise in completing all necessary tasks. Diligence, accuracy, and professional competence advanced all activities to completion. The research faculty served as their own motivators and directors of their individual studies. They designed the study, developed the instruments, solicited participation from colleagues, administered and scored tests, compiled and analyzed data, prepared final papers, and did their own clerical work. All three used computers to carry out their work.

RESEARCH ADVISOR

The research advisor was available as needed and when needed to provide guidance and to complete essential tasks for finishing the studies and final report. The role of the advisor to guide faculty and assist with quantitative and qualitative analysis proved to be essential for the success of this project.

PROJECT DIRECTOR

The project director did visit informally and on an occasional basis with research faculty and the advisor; however, there were no group meetings conducted as originally intended. This is attributed to a few factors, 1) research faculty did not require "direction" but rather clarification on minor issues, 2) the actual research work was conducted by faculty who had previous experience with classroom based research, and 3) the project director completes more tasks in up-front planning and final report preparation.

PRODUCT

Each study prepared by the individual research faculty and the final report serve as the final product of this research effort. The studies provide evidence of the thought, time, energy, and commitment of each research faculty. The reports show what was accomplished, how it was carried out, data collected, statistical treatments, and analysis of findings. They also reveal the attention and care given to this effort.

The research results indicate which strategies did or did not have a significant effect on learning, but just as important, the studies reflect the insight of the research faculty on the concept and practice of classroom research. Finally, the studies are proof that community college faculty can conduct meaningful research which can contribute to the knowledge base for improving teaching and learning.

IMPACT

Perhaps the most significant aspect of this project is not the process or product, but rather the impact. Involvement in classroom based research reveals the professional strength and dedication of teaching faculty; taps their motivation; demonstrates their capability for quality research work; provides a new dimension for measuring student outcomes; promotes individual faculty growth; fosters colleague interaction; and focuses faculty efforts in the classroom to improve teaching and learning.

INSTRUMENT

As proposed in the staff development application, an evaluation instrument was prepared and distributed to project participants. The three research faculty and the research advisor responded, and the compiled results are included with this report. Responses were favorable and generally in close agreement. Perhaps the most significant aspects of the instrument are the issues raised and potential future direction for classroom research at Sacramento City College.

The most notable responses concerns: 1) the level of instructor satisfaction, professional growth, and potential benefit to teaching activities; 2) the cooperation of colleagues and willingness of research faculty to share their results; 3) the interest in research workshops; and 4) support for research activity to receive further consideration from Staff Development and the potential to consider sabbatical or release time for classroom research.

SUMMARY

Sacramento City College has established itself as a leader in the use of classroom based research to improve teaching and learning. From 1985-88, ten studies have been completed at SCC. For 1988-89, SCC will work with Irvine Valley College to conduct twelve classroom based research studies directed at instructional improvement.

This is a valuable and productive activity which focuses and supports faculty efforts in the classroom. Efforts should be continued to increase faculty involvement in this endeavor.

SCC has an institutional research plan which identifies classroom based research as a priority. In addition, faculty should be encouraged to consider classroom research as a potential activity for sabbaticals or release time.

Finally, staff development can play a significant role in promoting faculty involvement by sponsoring workshops which are research related and through continued funding of faculty to conduct classroom research.

This is a cost effective means to gain major returns with a minimal investment.

INTEGRATING CONTENT AREA, STUDY, AND WRITING SKILLS
INSTRUCTION - FOLLOW-UP STUDY

A RESEARCH PROJECT CONDUCTED BY
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FALL SEMESTER 1987

I. DESCRIPTION OF THE ORIGINAL PROJECT

The aim of the original research project was to determine if there is a measurable effect of any significance when integrating study and writing skills instruction with content area instruction. Control groups in introduction to philosophy and introduction to logic classes were compared with experimental groups which were taught using the same texts, had the same requirements, etc., except that special materials in study and writing skills instruction were made available to students in the experimental sections. The study and writing skills materials were put together by me in workbooks which were thoroughly evaluated by several colleagues whose area of specialization is study skills and English composition. Assignments from the workbooks were made, but not graded, in the experimental sections. The control and experimental groups were compared in the following areas: midterm and final exam scores, attendance rates, retention rates, course grades and units attempted and completed. Some effort was made to divide the groups into subgroups to make comparisons among students who scored below college level on the Nelsen Denny Form A reading test. Finally, a survey was taken in the experimental groups to determine how the materials were being used and what value the student ascribed to them.

II. RESULTS OF THE ORIGINAL STUDY

No significant difference was discovered between the experimental and the control groups in any of the areas measured, with the possible exception that the retention rate among those reading below college level may have been significantly enhanced by the inclusion of study and writing skills materials into the course.

III. DESCRIPTION OF THE FOLLOW-UP STUDY

A follow-up study was done during the following semester in which two sections of the introduction to philosophy course were compared, one section being given graded assignments from the study skills materials.

Thus, a significant difference from the original study was introduced; the study skills materials would not be done independently by students but would be integrated into the course in such a way that graded homework assignments aimed primarily at enhancing study skills would be required and rewarded. Members of the original experimental groups strongly supported the idea that the materials would be more effective if graded assignments were made from them.

Midterm and final exam scores for the control group in the original study were compared with the scores for two sections of the introduction to philosophy course during the following semester, the latter being labeled Experimental Group A and Experimental Group B. The exams were identical to the exams given in the original study: true/false, multiple choice exams graded by a Scantron Grading machine. In addition, retention rates were compared.

A statistical analysis of the data was made, using the same formulae and techniques as the original study. A 't' value of 2.0 is significant at the .05 level for samples in the size range used.¹ The highest 't' value measured in the study was .13, well below any significant level.

IV. FINDINGS OF THE FOLLOW-UP STUDY

I was unable to find any significant difference in either the grades compared or the retention rates between the experimental and control groups.

A. RETENTION RATES

CONTROL GROUP = 86%
EXPERIMENTAL GROUP A = 77%
EXPERIMENTAL GROUP B = 66%

B. MIDTERM EXAM SCORES

CONTROL GROUP : MEAN = 70.36
EXP. GROUP A : MEAN = 73.91
EXP. GROUP B : MEAN = 73.05

C. FINAL EXAM SCORES

CONTROL GROUP : MEAN = 67.00
EXP. GROUP A : MEAN = 69.43
EXP. GROUP B : MEAN = 60.42

¹ Fadil H. Zuwaylif, General Applied Statistics, (Reading, Massachusetts: Addison-Wesley Publishing Co., 1974.)

V. CONCLUSION

It is clear to me that I was unable to significantly affect any measurable outcomes by introducing study and writing skills instruction into my philosophy classes. Of course, my materials may be inadequate or I may be inadequately using them. And, it is possible that a single semester is too short a time to expect any significant results from the additional instruction given. Also, I suppose I ought to at least be grateful that I did no harm: I at least demonstrated that it is possible to cover all the material while also giving some instruction in study and writing skills. There may be some other value to integrating study and writing skills instruction into content area courses besides improving grades or retention rates. At the very least, such activity serves to reinforce the work of colleagues who specialize in such instruction. And, there are the individual cases--the student who barely eked out C's on her first few tests but who ended up with the highest scores on the last two (and most difficult) exams of the course and an A on her term paper and who credits her success to the study and writing skills materials. Then there was the guest of a student who told me after class that she had bought the study skills materials, had gone through it on her own and was encouraged by it to return to school and enroll in our College Success Course. The individual successes have convinced me that the ten years I have spent putting these materials together have not been in vain. I am disappointed that no greater outcome occurred, of course. And, I believe I am justified in saying that perhaps the most appropriate thing to do is to make the study and writing skills materials available to my students, but I do not think I will require these materials any more, nor will I attempt to integrate study and writing skills instruction in my courses.

Finally, I would like to make a comment on some of the things I have learned about doing classroom based research of the type attempted. Given the fact that every class I teach is going to have an extremely wide range of abilities, evidenced by very large standard deviations on every exam given, it would be very difficult to ever demonstrate that a measurable difference was significant when the samples are as small as those likely to be used in such studies. Differences in grades or retention rates of 10 or 15 percent could well be due to chance, given the diversity of our students and the multifarious variables that can significantly affect these factors.

The greatest benefit to me from these studies has been the discovery that in an area where I thought I was making a significant difference it turns out that the real significant difference is between what I thought I was doing and what I actually was doing. I wonder how many other such significant differences are waiting to be discovered?

APPENDIX 1 : THE DATA

Experimental Group A -
Midterm

Assignment number : 6
Number of Scores : 23
Mean : 73.91
Variance: 133.64
Standard deviation: 11.56

Experimental Group A -
Final Exam

Assignment number : 11
Number of Scores : 23
Mean : 69.43
Variance: 134.85
Standard deviation: 11.61

Experimental Group B -
Midterm

Assignment number : 6
Number of Scores : 19
Mean: 73.05
Variance: 137.63
Standard deviation: 11.73

Experimental Group B -
Final

Assignment number : 11
Number of Scores : 19
Mean: 60.42
Variance: 292.35
Standard deviation: 17.10

MIDTERM ANALYSIS

Control Group -
Midterm

Assignment number : 1
Number of Scores : 36
Mean: 70.36
Variance: 147.18
Standard deviation: 12.13

Control Group -

Sample One:
Size = 36
Mean = 70.36
Standard Deviation = 12.13

Experimental Group A -

Sample Two:
Size = 23
Mean = 73.91
Standard Deviation = 11.56

$t = -0.094$

Control Group -

Sample One :
Size = 36
Mean = 70.36
Standard Deviation = 12.13

Experimental Group B -

Sample Two :
Size = 19
Mean = 73.05
Standard Deviation = 11.73

$t = -0.066$

FINAL EXAM ANALYSIS

Control Group -

Sample One :
Size = 31
Mean = 67.00
Standard Deviation = 10.50

Experimental Group A -

Sample Two:
Size = 23
Mean = 69.43
Standard Deviation = 11.56

 $t = -0.073$

Control Group -

Sample One :
Size = 31
Mean = 67.00
Standard Deviation = 10.50

Experimental Group B -

Sample Two :
Size = 19
Mean = 60.42
Standard Deviation = 17.10

 $t = 0.126$

LOGARITHMS AND THE HAND HELD CALCULATOR

A Classroom Based Research Project Conducted By
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Sacramento City College
Fall Semester 1987

I. BACKGROUND AND GENERAL COMMENTS

Logarithmic and Exponential functions are studied in virtually every Intermediate Algebra course. In years past these functions were of importance because of their use in calculating. Logarithms would, for example, allow a mathematician or an engineer to find, very easily, the fifth root of a number like 34.5. Each textbook came with tables of logarithms to be used for student reference. The sliderule used by every scientist and engineer was based on logarithms. But with the advent of the hand held calculator, logarithms are no longer needed to perform involved mathematical calculations. They are, however, important when dealing with such things as exponents, exponential functions and exponential equations. Thus, these topics are still included in the study of algebra.

Finding the value of two multiplied by itself four times (2 times 2 times 2 times 2) is easy to do and is easy to understand. Finding two multiplied by itself twenty times is more difficult to do but is comprehensible. Finding 2 multiplied by itself 17.45 times is much more difficult to do and is almost impossible for students to comprehend. What does it mean to multiply a number by itself 17.45 times? As if that question was not hard enough to answer, the next task would be to find the number of times two must be multiplied by itself in order to get something like 10.9. The first set of problems were exponential in nature while the last problem was logarithmic.

The fact is that no matter when or how logarithms are studied they are difficult to understand. The question is, would the hand held calculator be of value in understanding this topic?

DOES THE HAND HELD CALCULATOR HELP IN UNDERSTANDING THE
EXPONENTIAL AND LOGARITHMIC FUNCTIONS?

II. THE ORIGINAL STUDY

During the previous semester a Classroom Based Research Project was conducted concerning calculators and their general use in Algebra classes. There was a comparison made between two instructors, one using calculators and one not using calculators. There were three general questions addressed in that study.

1. Do students get correct answers more often doing calculations with a calculator then using only pencil and paper?
2. Does instruction (and practice) improve skills using a calculator?
3. Does the use of a calculator aid in the general understanding of mathematics?

This project laid the ground work for a more specific study into a much needed and "natural" application of calculators. There was a desire to involve more instructors and more students. Thus two more teachers and a total of four more classes were added to this project.

III. PROCEDURE

A fourteen question test was created with input and suggestions from different members of the Mathematics Faculty. The test was generic in nature. That is to say, it was not designed with any textbook in mind. Questions were of a general nature and should have been understood by any student from any Intermediate Algebra class. The pre-test was given immediately before a class was to start their study of logarithms. The post-test was given immediately after a class completed their study of the chapter. The pre and post tests were the exact same test but were administered approximately two to three weeks apart. The tests were timed and students were not allowed more than fifteen minutes for each test. Since this was a test of understanding of logarithms and since "half" of the students were not allowed to use calculators, NO CALCULATORS were allowed to be used on the test.

Four instructors were involved in the study. Two used calculators in their presentations and discussions throughout the chapter. Students were encouraged to use calculators on homework, quizzes and tests. There was no formal coordination between the two instructors using calculators. Both instructors did discuss strategies and uses between themselves but used their own techniques in the classroom. The other two instructors did not use or discuss the calculator in conjunction with the study on logarithms and exponentials.

Three of the instructors had a single class of intermediate algebra and therefore produced data for only one set of students for each teacher. The fourth instructor had three sections of intermediate algebra (one a night class), and therefore had three sets of data.

There were a few students that did not take both the pre and post tests and there were a few students that did not put their names on their test. These people were eliminated from the study and

only data from students that took both the pre and post tests were considered. All tests were hand graded by me, therefore uniformly scored even if there was room for variance in some of the answers.

IV. RESULTS

There were six classes that took part in this study. Two used calculators and four did not use calculators. The teachers Hatton (Hat) and Wheeler (Whe) used calculators and the teachers Sellers (Sel) and Paschal (Pas) did not use calculators. Note: Pas 9, Pas 2, and Pas 6 represent the three classes Paschal taught.

Final Results of T Test for Pretest

	Sel	Pas9	Pas2	Pas6	Total(1)
Hat	-0.4	-0.5	-2.3	0.1	
Whe	-1.6	-1.8	-3.9	-1.7	
Total(2)					-1.3

All of the data from the students "with" was combined and compared with the combined data from the students "without." The value of -1.3 for T found for the "Total"s is within the target of -1.6 to 1.6. Therefore the two groups should have been at parity. (That is to say, equal or similar at the start of the study.) But notice the individual values along the row for Whe. These scores at or below -1.6 indicate that this class was not at the same level as the other classes. Also, there were only thirteen data points for this class (See attached pages). Along the row for Hat three classes had parity and one did not. Pas2 had a T value of -2.3 which was outside accepted values. As a result the only meaningful comparisons that can be made are for Hat/Sel, Hat/Pas9, Hat/Pas6 and, possibly, Total(1)/Total(2).

Final Results of T Test for Posttest

	Sel	Pas9	Pas2	Pas6	Total(1)
Hat	2.4	1.4	-0.2	0.3	
Whe	-0.2	-1.1	-2.6	-2.0	
Total(2)					-0.1

The T value of 2.4 for Hat/Sel indicates that there was a significant difference. The value of 1.4 for Hat/Pas9 was high but not the 1.6 or more needed to show that there was a difference. The score of 0.3 for Hat/Pas6 showed no real difference between the two types of presentations, with or without a calculator. (Pas6 was an evening class which could have consisted of a different type of student.) The Total(1)/Total(2) figure of -0.1 also indicates no difference between the two. But again, this figure should be suspect because of the aforementioned class not at parity.

The end result is that in one case the calculator was a significant help when studying logs and exponents. In the second case there was an indication that it was of help. In the third case there was no difference. And with a total student comparison, there was no difference.

Final Results of T Test for Pretest

	Sel	Pas9	Pas2	Pas6	Total(1)
Hat	-0.4	-0.5	-2.3	0.1	

Final Results of T Test for Posttest

	Sel	Pas9	Pas2	Pas6	Total(1)
Hat	2.4	1.4	-0.2	0.3	

Comparing the Hat row of the Pretest to the Hat row of the Posttest, every one of the T scores increased in value. This indicates that there was a positive influence made on the class. The most important reason being the use of the calculator in the study of the subject.

V. FINAL COMMENTS

It is unfortunate that a "bad" class probably skewed the numbers and therefore made the overall results questionable. But the positive results are encouraging. I do believe that the calculator does help students understand the exponential and logarithmic functions.

These tests were based on the assumptions that the standard deviations of the distributions of pretest scores of the populations compared were essentially the same. The same assumptions were made for the distributions of posttest scores. Although the variances were not tested using an appropriate F-test, the computed standard deviations were quite similar in values.

μ_1 : Population 1

μ_2 : Population 2

$$H_0 : \mu_1 - \mu_2 = 0$$

$$H_a : \mu_1 - \mu_2 > 0$$

The level of significance is $\alpha = 0.05$.

The test statistic is:

$$T = \frac{\bar{x} - \bar{y}}{S_p \sqrt{\frac{1}{m} + \frac{1}{n}}} \quad \text{where } S_p = \frac{(m-1)S_1^2 + (n-1)S_2^2}{m+n-2}$$

Data:

HATTON/SELLERS

		<u>Pretest</u>	<u>Posttest</u>
Hatton's	m = 20	$\bar{x} = 1.96$	$\bar{x} = 6.50$ (Population 1)
Seller's	n = 26	$\bar{y} = 2.11$	$\bar{y} = 4.58$ (Population 2)
<u>Test A</u>	Comparing Pretest	d.f. = 20 + 26 - 2 = 44	$t_c = 1.684$
	t = -0.41	(not significant)	
<u>Test B</u>	Comparing Posttest	d.f. = 44	$t_c = 1.684$
	t = 2.438	(significant, Reject H_0 and accept H_a)	

Total Groups

		<u>Pretest</u>	<u>Posttest</u>	
With	m = 33	$\bar{x} = 1.9$	$\bar{x} = 5.3$	(Population 1)
Without	n = 79	$\bar{y} = 2.2$	$\bar{y} = 5.4$	(Population 2)

Test A Comparing Pretest d.f. = $33 + 79 - 2 = 110$ $t_c = 1.661$
 $t = -1.291$ (not significant)

Test B Comparing Posttest d.f. = 44 $t_c = 1.661$
 $t = -0.111$ (not significant)

HATTON/PASCHAL

		<u>Pretest</u>	<u>Posttest</u>	
Hatton's	m = 20	$\bar{x} = 1.96$	$\bar{x} = 6.50$	(Population 1)
Paschal's	n = 26	$\bar{y} = 2.16$	$\bar{y} = 5.32$	(Population 2)

Test A Comparing Pretest d.f. = $20 + 26 - 2 = 44$ $t_c = 1.661$
 $t = -0.536$ (not significant)

Test B Comparing Posttest d.f. = 44 $t_c = 1.661$
 $t = 1.376$ (not significant)

C.B.Rby Hatton

Raw Data

Hatton

Int	Pre	Post	Dif
br	4	5	1
bm	3	9	6
cp	4	4	0
ct	3	6	3
cm	0	3	3
ce	2	3	1
ct	6	7	1
da	0	4	4
dt	1	13	12
em	0	10	10
fj	2	0	-2
fl	1	8	7
pa	1	2	1
pj	3	2	-1
rf	1	7	6
rj	2	8	6
sb	5	9	4
tb	2	4	2
yc	2	6	4
yg	1	11	10

Hatton			
num	20	20	20
ave	1.93	6.50	4.57
sdv	1.66	3.38	3.81
sum	43	121	78

Wheeler

Int	Pre	Post	Dif
lt	2	4	2
hc	2	2	0
km	2	2	0
nc	0	3	3
he	0	9	9
ms	3	4	1
la	3	3	0
lk	2	7	5
?y	0	3	3
lh	2	2	0
ln	1	4	3
tb	1	7	6
sv	1	5	4

Wheeler			
13	13	13	
1.43	4.43	3.00	
1.05	2.20	2.74	
19	55	36	

Paschal 9:00

Int	Pre	Post	Dif
bb	3	4	1
bl	4	7	3
cm	3	4	1
bd	3	2	-1
ck	0	6	6
ec	1	6	5
fd	3	8	5
hc	1	9	8
ht	2	7	5
ht	2	5	3
kl	2	5	3
kp	4	8	4
nd	2	2	0
ma	3	3	0
nj	2	6	4
rc	3	2	-1
rc	4	7	3
sk	2	4	2
sk	3	2	-1
vm	1	3	2
vp	3	6	3
te	0	2	2
ya	1	8	7
wt	1	8	7
wa	2	6	4
sr	5	11	6
hw	1	3	2

Paschal 9			
26	26	26	
2.16	5.32	3.16	
1.26	2.50	2.58	
60	141	81	

Paschal 2:00

Int	Pre	Post	Dif
ba	2	7	5
bj	4	4	0
gr	3	9	6
gh	2	6	4
km	3	4	1
ll	2	4	2
mc	1	10	9
od	3	9	6
pl	5	3	-2
rs	2	6	4
tp	4	6	2
vl	3	6	3
vc	5	10	5
nm	2	4	2

Paschal 2			
14	14	14	
3.13	6.75	3.63	
1.21	2.40	2.82	
41	88	47	

Sellers

Int	Pre	Post	Dif
bl	0	1	1
bc	3	5	2
ck	0	7	7
fm	1	5	4
fs	1	3	2
gm	4	6	2
gs	2	7	5
gg	1	5	4
hh	3	4	1
jj	4	6	2
ls	2	2	0
ls	2	3	1
nl	3	2	-1
ps	4	8	4
ra	1	5	4
sa	3	3	0
sn	0	5	5
sb	3	3	0
tc	1	6	5
tp	2	8	6
tm	0	3	3
vm	1	6	5
wc	2	6	4
wp	2	3	1
yk	4	2	-2
md	1	6	5

Sellers			
26	26	26	
2.11	4.58	2.47	
1.32	1.96	2.33	
50	120	70	

Paschal 6:45

Int	Pre	Post	Dif
cc	5	6	1
cr	0	5	5
drc	1	7	6
cb	1	6	5
gv	2	5	3
fa	1	5	4
fr	2	9	7
hj	2	10	8
hr	2	4	2
ij	4	7	3
hd	3	4	1
pr	0	7	7
yw	3	2	-1

Paschal 6			
13	13	13	
2.29	6.14	3.86	
1.47	2.14	2.72	
26	77	51	

[illegible]

totals without

sum	62	176	114	
num	33	33	33	
std	1.47	3.07	3.43	

sum	177	426	249
num	79	79	79
std	1.31	2.33	2.50

Calculations for Pretest

Hat vs Sel
s1*s1 2.8
s2*s2 1.7
m-1 19.0
n-1 25.0
bot 44.0

pre
sp 1.5
X-Y -0.2
rec 0.3
T -0.4

Hat vs Pas9
s1*s1 2.8
s2*s2 1.6
m-1 19.0
n-1 25.0
bot 44.0

pre
sp 1.4
X-Y -0.2
rec 0.3
T -0.5

Whe vs Sel
s1*s1 1.1
s2*s2 1.7
m-1 12.0
n-1 25.0
bot 37.0

pre
sp 1.2
X-Y -0.7
rec 0.3
T -1.6

Whe vs Pas9
s1*s1 1.1
s2*s2 1.6
m-1 12.0
n-1 25.0
bot 37.0

pre
sp 1.2
X-Y -0.7
rec 0.3
T -1.8

Hat vs Pas2
s1*s1 2.8
s2*s2 1.4
m-1 19.0
n-1 13.0
bot 32.0

pre
sp 1.5
X-Y -1.2
rec 0.3
T -2.3

Hat vs Pas6
s1*s1 2.8
s2*s2 2.2
m-1 0.7
n-1 0.5
bot 1.1

pre
sp 1.6
X-Y 0.2
rec 1.1
T 0.1

Whe vs Pas2
s1*s1 1.1
s2*s2 1.4
m-1 12.0
n-1 13.0
bot 25.0

pre
sp 1.1
X-Y -1.7
rec 0.4
T -3.9

Whe vs Pas6
s1*s1 1.1
s2*s2 2.2
m-1 12.0
n-1 12.0
bot 24.0

pre
sp 1.3
X-Y -0.9
rec 0.4
T -1.7

total
s1*s1 2.2
s2*s2 1.7
m-1 32.0
n-1 78.0
bot 110.0

pre
sp 1.4
X-Y -0.4
rec 0.2
T -1.3

Calculations for Posttest

Hat vs Pas6
s1*s1 11.4
s2*s2 4.5
m-1 19.0
n-1 12.0
bot 31.0
post
sp 3.0
X-Y 0.4
rec 0.4
T 0.3

Hat vs Sel
s1*s1 11.4
s2*s2 3.8
m-1 19.0
n-1 25.0
bot 44.0
post
sp 2.7
X-Y 1.9
rec 0.3
T 2.4

Whe vs Pas6
s1*s1 4.8
s2*s2 4.5
m-1 12.0
n-1 12.0
bot 24.0
post
sp 2.2
X-Y -1.7
rec 0.4
T -2.0

Whe vs Sel
s1*s1 4.8
s2*s2 3.8
m-1 12.0
n-1 25.0
bot 37.0
post
sp 2.0
X-Y -0.2
rec 0.3
T -0.2

Hat vs Pas9
s1*s1 11.4
s2*s2 6.3
m-1 19.0
n-1 25.0
bot 44.0
post
sp 2.9
X-Y 1.2
rec 0.3
T 1.4

Hat vs Pas2
s1*s1 11.4
s2*s2 5.7
m-1 19.0
n-1 13.0
bot 32.0
post
sp 3.0
X-Y -0.3
rec 0.3
T -0.2

Whe vs Pas9
s1*s1 4.8
s2*s2 6.3
m-1 12.0
n-1 25.0
bot 37.0
post
sp 2.4
X-Y -0.9
rec 0.3
T -1.1

Whe vs Pas2
s1*s1 4.8
s2*s2 5.7
m-1 12.0
n-1 13.0
bot 25.0
post
sp 2.3
X-Y -2.3
rec 0.4
T -2.6

total
s1*s1 9.4
s2*s2 5.4
m-1 32.0
n-1 78.0
bot 110.0

post
sp 2.6
X-Y -0.1
rec 0.2
T -0.1

Summary of T Tests

Final results of T test for Pretest

	Sel	Pas9	Pas2	Pas6	tot
Hat	-0.41	-0.536	-2.311	0.106	
Whe	-1.616	-1.808	-3.904	-1.716	
tot					-1.291

Final results of T test for Post

	sel	Pas9	Pas2	Pas6	tot
Hat	2.438	1.376	-0.238	0.342	
Whe	-0.216	-1.089	-2.629	-2.025	
Tot					-0.111

NAME _____

Date _____

Instructor _____

LOG./EXP. POST TEST

PLEASE DO NOT START THIS TEST UNTIL TOLD
TO BEGIN

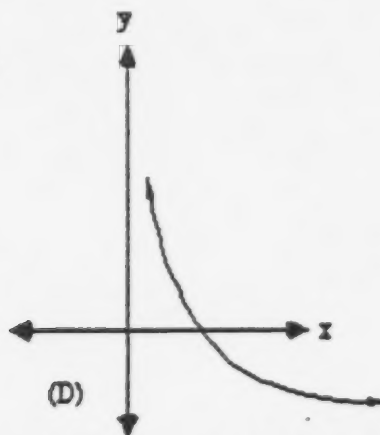
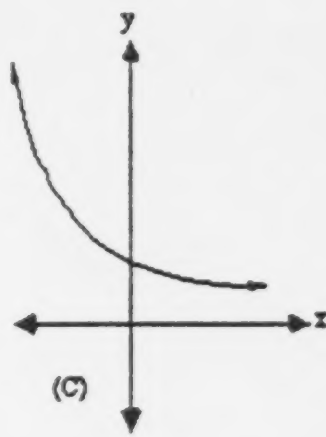
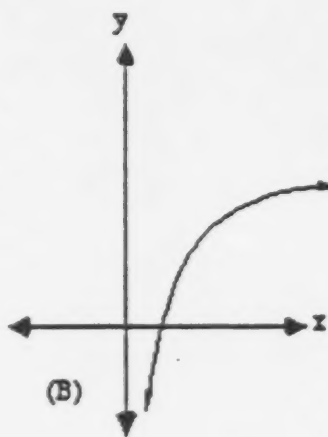
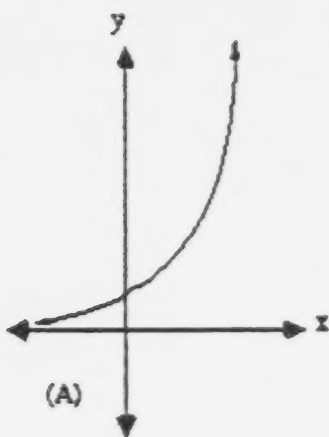
You may not understand some of the questions.

Do as many as you can in the time given

SCC Pretest log/calc
NO CALCULATORS ARE TO BE USED

Answer the following by placing your response or choice for an answer in the blank to the left of the problem number.

Use the choices below to respond to problems 1 and 2 below.



_____ **Problem 1.** Which of the graphs above could be a portion of the graph of $y = \log_9 x$?

_____ **Problem 2.** Which of the graphs above could be a portion of the graph of $y = \left(\frac{1}{2}\right)^x$?

_____ **Problem 3.** Solve $2^{3x} = \frac{1}{8}$ for x .

- _____ **Problem 4.** Which is larger A) $\log_7 8$ or B) $\log_5 3$?
- _____ **Problem 5.** If $\log_3 x = 4$, then $x =$
- _____ **Problem 6.** Solve $y = y_0 e^{kt}$ for t in terms of $\ln$.
- _____ **Problem 7.** Find $\log_3 9.1$ in terms of $\ln$.
- _____ **Problem 8.** Write $\log_5 x^2 - \frac{1}{2} \log_5 x^6 + \log_5 1$ as a single log base 5
- In 9 and 10, Solve for x :
- _____ **Problem 9.** $\log_{\frac{1}{2}} 16 = x$
- _____ **Problem 10.** $\log_x 16 = 2$
- _____ **Problem 11.** If the graph of $y = b^t$ is always increasing then
(A) $b < 0$ (B) $b > 0$ (C) $0 < b < 1$ (D) $b > 1$
- _____ **Problem 12.** If $\log_5(-10) = x$ then,
(A) $x \geq 0$ (B) $x \leq 0$ (C) $1 < x < 2$ (D) no real value for x
- _____ **Problem 13.** If $e^x = 18$ then
(A) $x < 1$ (B) $1 < x < 2$ (C) $2 < x < 4$ (D) $x > 4$
- _____ **Problem 14.** If $\log_{10} x = 0.1234$ then $\log_{10} 100x = ?$

END OF TEST

COMBINED READING AND WRITING INSTRUCTION

A Research Project Conducted by
Delbert L. Prescott
English Department
Sacramento City College
Spring Semester 1988

I. DESCRIPTION OF PROJECT

This study tested the effectiveness of a method of presenting remedial English instruction to students whose reading scores were below the seventh grade level. During the Spring Semester of 1988, these students were placed in a class which combined both reading and writing skills. Students met daily for two hours five days a week. The students were with the assigned teacher for all ten hours of instruction. Activities were carried out in a regular classroom and in the SCC Learning Center.

Typically, after assessment by the assessment center at Sacramento City College, these students would have been placed in two separate classes-- English 55, Basic Writing Skills, and English 69, Basic Reading Skills. These typical classes meet three hours each week, and students must sign into the appropriate English department lab twice a week to complete assignments given by their instructors.

A control group was identified in order to make comparisons for two of the questions under examination by this study. The control group consisted of students whose reading scores were also below the seventh grade level but who were registered in typical English 55 classes.

The basic questions under examination in the study were:

- 1- Do students who read below the seventh grade level show statistically significant improvement in reading skills when instruction in reading is combined with instruction in writing?
- 2- Do students who read below the seventh grade level show statistically significant improvement in writing skills when instruction in writing is combined with instruction in reading?
- 3- Do students in the combined English 55/69 class show statistically significantly higher retention rates than their counterparts who are in typical basic writing classes?
- 4- Do students in the combined English 55/69 class advance to the next level of writing skills classes at a statistically significantly higher rate than their counterparts who are in typical basic writing classes?

II. METHODOLOGY

Data for this study was collected from students enrolled in a combined section of English 55, Basic Writing Skills, and English 69, Basic Reading Skills at Sacramento City College. Following the advice of their counselors, these students were enrolled in this special section after completing the college English assessment testing.

Students were given extensive diagnostic testing the first two weeks of instruction. Testing identified strengths and weaknesses in reading and writing. Students then received prescriptive assignments and instruction in those skills. Assignments and instructional procedures were for the most part typical of remedial instruction at Sacramento City College. Approximately three-fifths of the instruction took place in large or small groups, and approximately two-fifths was completed in the lab where students worked on individualized assignments. Most assignments in reading and writing were coordinated in an attempt to show students the connection between reading and writing as reverse skills in the communication process. Students had the help of the instructor at all hours that they were required to meet and in addition had the assistance of two peer tutors who were trained in the use of the lab materials and in effective tutoring skills.

The assessment center identified the control group by examining test scores of all students who appeared on class rosters of all regular sections of English 55. Students became part of the control group if their assessment in reading was below the seventh grade level. These students were unaware of the fact that they were part of the study. Their instructors were aware only during the last week of instruction when they were asked to assess the progress of these students.

Several sets of data were collected to provide comparisons in this study. Standardized testing provided four sets of scores for comparisons. Test scores from the Stanford Test of Academic Skills administered by the SCC assessment center were obtained in vocabulary, comprehension, spelling and English. Also, students were pre and post tested using the placement test for the AVT Learning System in Reading published by Media Systems Corporation. This test is non-standardized, but was a good measure of progress because the AVT system was used extensively as reading practice exercises.

Another set of data came from writing samples taken both at the beginning and the end of the semester. These samples were scored by a member of the English department using a thirty-six point scale. Promotion data came from another instructor in the English department who judged the final samples to determine whether students were proficient enough to be promoted to the next level of writing instruction.

Two additional sets of data were collected for the control group. First, the Admissions and Records Office provided enrollment numbers for the fourth week and the final week. They were compared to the enrollment numbers for the experimental group. And, instructors of students who were members of the control group were contacted and asked if, in their judgment, those students were ready to advance to the next level of writing instruction. A simple yes or no answer was obtained from each instructor about each student in the control group. The total number of students promoted was compared to the total number promoted in the experimental group.

III. DATA RESULTS

For all tests:

$$\begin{aligned} H_o &: \mu_d = 0 \\ H_a &: \mu_d > 0 \\ \alpha &= 0.05 \end{aligned}$$

The test statistic will be:

$$T = \frac{\bar{d}}{\frac{s_d}{\sqrt{n}}}, \text{ using degrees of freedom} = n - 1$$

Test 1 - Spelling

$$t_c = 1.895 \text{ (d.f.} = 7 \text{)}$$

$$\text{With } \bar{d} = 2.63$$

$$s_d = 2.39$$

$$n = 8$$

$$T = \frac{2.63}{\frac{2.39}{\sqrt{8}}} = 3.112$$

Since $3.112 > 1.895$, reject H_o .

Test 2 - English

$$t_c = 1.895 \text{ (d.f. = 7)}$$

$$\text{With } \bar{d} = 4.50$$

$$s_d = 4.41$$

$$n = 8$$

$$T = \frac{4.50}{\frac{4.41}{\sqrt{8}}} = 2.886$$

Since $2.886 > 1.895$, reject H_0

Test 3 - Total Spelling and English

$$t_c = 1.895 \text{ (d.f. = 7)}$$

$$\text{With } \bar{d} = 7.13$$

$$s_d = 5.82$$

$$n = 8$$

$$T = \frac{7.13}{\frac{5.82}{\sqrt{8}}} = 3.465$$

Since $3.465 > 1.895$, reject H_0

Test 4 - Vocabulary

$$t_c = 1.895 \text{ (d.f. = 7)}$$

$$\text{With } \bar{d} = 4.13$$

$$s_d = 3.64$$

$$n = 8$$

$$T = \frac{4.13}{\frac{3.64}{\sqrt{8}}} = 3.209$$

Since $3.209 > 1.895$, reject H_0

Test 5 - Reading

$$t_c = 1.895 \text{ (d.f. = 7)}$$

$$\text{With } \bar{d} = 1.88$$

$$s_d = 4.19$$

$$n = 8$$

$$T = \frac{1.88}{\frac{4.19}{\sqrt{8}}} = 1.269$$

Since $1.269 < 1.895$, do not reject

Test 6 - Total Vocabulary and Reading

$$t_c = 1.895 \text{ (d.f. = 7)}$$

$$\text{With } \bar{d} = 6.00$$

$$s_d = 5.29$$

$$n = 8$$

$$T = \frac{6.00}{\frac{5.29}{\sqrt{8}}} = 3.207$$

Since $3.207 > 1.895$, reject H_0

Test 7 - AVT Reading Test

$$t_c = 1.782 \text{ (d.f. = 12)}$$

$$\text{With } \bar{d} = 4.23$$

$$s_d = 5.04$$

$$n = 13$$

$$T = \frac{4.23}{\frac{5.04}{\sqrt{13}}} = 3.026$$

Since $3.026 > 1.782$, reject H_0

Test 8 - Writing Sample

$$t_c = 1.771 \text{ (d.f. = 13)}$$

$$\text{With } \bar{d} = 4.86$$

$$s_d = 4.55$$

$$n = 14$$

$$T = \frac{4.86}{\frac{4.55}{\sqrt{14}}} = 3.997$$

Since $3.997 > 1.771$, reject H_0

Test 9 - Retention

Population I
(Experimental)

π_1 = Proportion of students
retained

$$p_1^* = \frac{14}{25} = 56\%$$

Population. II
(Control)

π_2 = Proportion
retained

$$p_2^* = \frac{24}{44} = 55\%$$

$$H_0: \pi_1 - \pi_2 = 0$$

$$H_a: \pi_1 - \pi_2 > 0$$

$$\alpha = 0.05$$

The test statistic will be

$$Z = \frac{p_1^* - p_2^*}{\sqrt{p^*(1-p^*)} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}, \text{ when } p^* = \frac{n_1 p_1^* + n_2 p_2^*}{n_1 + n_2}$$

If $Z > z_c$ ($= 1.65$), then reject H_0

With $p_1^* = \frac{14}{25}$, $n_1 = 25$, $p_2^* = \frac{24}{44}$ and $n_2 = 44$

$$Z = \frac{\frac{14}{25} - \frac{24}{44}}{\sqrt{0.120383...} \sqrt{\frac{1}{25} + \frac{1}{44}}}$$

$$p^* = \frac{14}{25} + \frac{24}{44} = 0.55...$$

$$= \frac{0.0145...}{.086...}$$

$$= 0.17 \text{ do not reject}$$

Test 10 Promotion

Population I
(Experimental)

π_1 = Proportion
Promoted

$$p_1^* = \frac{6}{14} \approx 0.429$$

Population II
(Control)

π_2 = Proportion
Promoted

$$p_2^* = \frac{14}{24} \approx 0.583$$

$$\begin{aligned} H &: \pi_1 - \pi_2 = 0 \\ H^0 &: \pi_1^1 - \pi_2^2 = 0 \\ \alpha &= 0.05 \end{aligned}$$

The test statistic will be

$$Z = \frac{p_1^* - p_2^*}{\sqrt{p^*(1-p^*)} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}$$

If $Z < -z_c$ or $Z > z_c$ (± 1.96), then reject H_0 .

With $p_1^* = \frac{6}{14}$, $n_1 = 14$, $p_2^* = \frac{14}{24}$ and $n_2 = 24$

$$\begin{aligned} Z &= \frac{\frac{6}{14} - \frac{14}{24}}{\sqrt{0.2763...} \sqrt{\frac{1}{14} + \frac{1}{24}}} & p^* &= \frac{6 + 14}{14 + 24} = \frac{20}{38} = 0.526... \\ &= \frac{-0.15476...}{0.17678...} \\ &= -0.87 \quad \text{Do not reject} \end{aligned}$$

IV. SUMMARY

Data collected in this study shows that students made statistically significant gains in all academic areas except reading comprehension. Students made significant gains in post tests scores on the vocabulary, total vocabulary and comprehension, spelling, English, and total spelling and English scores on the Task test.

Students made significant gains on the AVT placement test, and they also showed significant gains on the writing sample. The writing sample scores showed the most significant gain of all of the scores compared.

Data collected on retention of students in the control and the experimental group showed that there was no difference. The retention rate for the experimental group was fifty-six percent and the rate for the control group was fifty-five percent.

Data collected on promotion of students in the control and the experimental groups also showed no significant difference statistically. Forty-three percent were promoted from the experimental group and fifty-eight percent were promoted from the control group.

V. CONCLUSIONS/RECOMMENDATIONS

A total of 39 students were enrolled in the experimental class during the first week of instruction. Seven of these never attended after their enrollment, one was transferred to an ESL class, one was moved up to an English 70 class, and five dropped for unknown reasons before the fourth week of the semester. The remaining twenty-four students comprised the experimental group at the end of the fourth week of the semester.

The diversity of this group is the most significant factor. They were all reading below the seventh grade on the standardized tests, but that was their only similarity. Two students spoke English as their second language and did not score high enough on the Michigan Test for admission to SCC's ESL program. They could not be persuaded to attend classes at local adult education centers. Two students were recent graduates of the Easter Seal head trauma program. Both had suffered head injury in automobile accidents. Five students had been in special education classes in high schools; only one of those students was in college for the first time. Each of the other four had thirty or more college units and had been informed that this class was their last chance to bring their skills up to college level. One student had been tested and diagnosed as learning disabled by a learning disabilities specialist prior to admission to SCC, and five others were tested and accepted as part of the LD program to begin at SCC in the Fall of 1988.

Of the twenty-four students who remained after the fourth week, eleven did not finish the semester. Three could not be contacted by phone. Five found jobs (two with the help of the Calif. State Dept of Rehabilitation). Two had family problems. And one dropped after her doctor advised her of high blood pressure.

In truth, of the twenty-four who began instruction only six demonstrated sustained effort over the course of the semester. And of those six only two were given a recommendation to advance to the next level of instruction in writing skills: one was an Easter Seal graduate and the other was a high school special education graduate. Of the four others who were given recommendations to advance in their writing skills, all had poor attendance and did not complete all of their prescribed tasks in either reading or writing.

I feel that the biggest success for this class this semester may have been the five students who found employment. Maybe in some way the class helped them find the confidence to face an interview and be hired.

Attendance was a constant problem after the mid-point in the semester. The instructor called students at home and used friends of truant students to encourage students to continue their efforts. Without constant reinforcement the drop rate would undoubtedly have been much higher.

It seems clear that some program needs to be offered for the students who come to SCC reading below the seventh grade level. It is not clear whether this program should be an English class. Clearly there should be a very strong program of diagnostic testing. The TASK assessment test is, after all, only a gross screening instrument. Clearly a program of counseling and referral is called for. Extensive diagnostic testing followed by academic counseling could give these students greater confidence in themselves and place them into programs where they have a greater chance of achieving their goals. A large percentage of these students belonged in other programs which exist at SCC and in adult education.

I recommend the formation of a committee to study this data and other data that might be available from other community colleges. I believe a committee of counselors, assessment personnel, and English faculty could devise a program or class which could meet the needs of these students. It is clear that some of them can advance and that all of them deserve every opportunity the college can give them to help them achieve their academic goals.

TASK SCORES

	SPELLING			ENGLISH			TOTAL			
	PRE	POST	d	PRE	POST	d	PRE	POST	d	
Alvernaz, G.	11	13	2	18	26	8	29	39	10	
Amare, K.		13	-		19	-		32	-	
Azevedo, M.	10	10	0	19	19	0	29	29	0	
Bennett, M.	19	21	2	33	34	1	52	55	3	
Bessye, V.	19		-	31		-	50		-	
Chima, B.	10	15	5	11	18	7	21	33	12	
Dockery, S.	19		-	16		-	35		-	
Guice, D.	10	13	3	18	16	-2	28	29	1	
Miller, D.	11	18	7	16	26	10	27	44	17	
Perez, S.			DID NOT TAKE			TOO LOW				
Sears, D.	12	12	0	18	26	8	30	38	8	
Smith, G.			DID NOT TAKE			TOO LOW				
Snyder, D.	17	19	2	8	12	4	25	31	6	
Wittig, R.			DID NOT TAKE			TOO LOW				

TEST 1: d = 2.63
d = 2.39
n = 8

TEST 2: d = 4.50
d = 4.41
n = 8

TEST 3: d = 7.13
d = 5.82
n = 8

TASK SCORES

	VOCAB			READING			TOTAL			
	PRE	POST	d	PRE	POST	d	PRE	POST	d	
Alvernaz, G.	17	18	1	21	26	5	38	44	6	
Amare, K.		14	-		16	-		30	-	
Azevedo, M.	18	19	1	22	26	4	40	45	5	
Bennett, M.	14	20	6	25	33	8	39	53	14	
Bessye, V.	15		-	24		-	39		-	
Chima, B.	8	11	3	17	18	1	25	29	4	
Dockery, S.	19		-	26		-	45		-	
Guice, D.	11	13	2	18	13	-5	29	26	-3	
Miller, D.	9	21	12	23	23	0	32	44	12	
Perez, S.	6		-	10		-	16		-	
Sears, D.	18	21	3	19	23	4	37	44	7	
Smith, G.			DID NOT TAKE				TOO LOW			
Snyder, D.	16	21	5	11	9	-2	27	30	3	
Wittig, R.			DID NOT TAKE				TOO LOW			

TEST 4: d = 4.13
d = 3.64
n = 8

TEST 5: d = 1.88
d = 4.19
n = 8

TEST 6: d = 6.00
d = 5.29
n = 8

AVT PLACEMENT SCORES

Writing
Scores
Total Possible 36

	PRE	POST	d			PRE	POST	d		
Alvernaz, G.	12	29	17			13	20	7		
Amare, K.	6	12	6			10	16	6		
Azevedo, M.	5	11	6			14	17	3		
Bennett, M.	20	23	3			31	33	2		
Bessye, V.	16	24	8			15	18	3		
Chima, B.	13	11	-2			16	18	2		
Dockery, S.	12	15	3			17	19	2		
Guice, D.	12	11	-1			15	18	3		
Miller, D.	14	16	2			19	24	5		
Perez, S.	5					18	20	2		
Sears, D.	16	24	8			18	19	1		
Smith, G.	6	8	2			9	28	19		
Snyder, D.	11	10	-1			20	27	7		
Wittig, R.	11	15	4			14	20	6		

TEST 7: d = 4.23
d = 5.04
n = 13

TEST 8: d = 4.86
d = 4.55
n = 14

PARAGRAPH CHECK LIST (TEST 8)

				Student	
Very Weak	Weak		Strong	Very Strong	
		Topic			
		First Sentence			
		Supporting ideas			
		Details			
		Coherence			
		Sentences			
		Grammar			
		Punctuation			
		Spelling			

TEST 9

Control Group: Retention

Total number of English 55 students	= 218	
Total number of English 55 below 7.0 (the control group)	= 44	4th week
Total number below 7.0 5/23	= 24	

Experimental Group: Retention

Total enrollment 4th Week	= 25
Total enrollment 5/23	= 14

TEST 10

Control Group: Promotion to English 56

Total enrollment 4th week	= 44
Total enrollment 5/23	= 24
Total promoted	= 14

Experimental Group Promotion

Total enrollment 4th week	= 25
Total enrollment 5/23	= 14
Total promoted	= 6

SACRAMENTO CITY COLLEGE
CLASSROOM BASED RESEARCH
EVALUATION

1. What is your opinion of the Classroom Based Research concept to improve teaching and learning?

3/4	1/4			
Excellent	Very Good	Good	Needs	Not
Idea	Idea	Idea	Refinement	Appropriate
1	2	3	4	5

2. From a professional growth perspective the value of classroom based research to you was

2/4	2/4			
Extremely	Very		Not Very	Not
High	High	Average	High	Applicable
1	2	3	4	5

3. Your level of satisfaction with your study was

1/4	3/4			
Extremely	Very		Not Very	Not
Satisfied	Satisfied	Satisfied	Satisfied	Applicable
1	2	3	4	5

4. The value of classroom based research for SCC to improve teaching and learning is

4/4				
Extremely	Very		Not Very	Not
High	High	Average	High	Applicable
1	2	3	4	5

5. As a result of your findings related to the topic of study, adjustments in your teaching strategies will be

2/4				1/4
Extremely	Very		Not Very	Not
Likely	Likely	Likely	Likely	Applicable
1	2	3	4	5

6. Considering the student outcomes of your study what you learned is

2/4	2/4			
Extremely	Very		Not Very	Not
Useful	Useful	Useful	Useful	Applicable
1	2	3	4	5

7. Your interest in this activity is

3/4	1/4			
Extremely	Very		Not Very	Not
High	High	Average	High	Applicable
1	2	3	4	5

8. The potential for you to continue classroom based research study is
1/4 **2/4** **1/4** Not Very High Not Applicable
 Extremely High Very High Average High
 1 2 3 4 5
9. Conducting classroom research is
 Extremely Difficult Very Difficult Difficult Not Very Difficult Not Applicable
1/4 **3/4** **1/4**
 1 2 3 4 5
10. How interested do you think other faculty may be in conducting classroom research studies?
 Extremely Interested Very Interested Interested Not Very Interested Not Applicable
3/4 **1/4**
 1 2 3 4 5
11. The potential benefits to colleagues who become involved in classroom based research are
 Extremely High Very High Average High Not Very High Not Applicable
4/4
 1 2 3 4 5
12. Of your colleagues who were aware of your study their level of interest was
 Extremely High Very High Average High Not Very High Not Applicable
3/4 **1/4**
 1 2 3 4 5
13. Colleagues who participated in your study were
 More Than Accommodating Very Accomod. Accomod. Not Very Accomod. Not Applicable
2/4 **1/4** **1/4**
 1 2 3 4 5
14. The emphasis on quantitative research versus qualitative research is
 More Than Sufficient Very Sufficient Sufficient Less Than Sufficient Not Applicable
1/4 **1/4** **1/4**
 1 2 3 4 5
15. Your interest in sharing your experiences with other colleagues is
 Extremely High Very High Average High Not Very High Not Applicable
1/4 **3/4**
 1 2 3 4 5

16. Would you recommend classroom based research studies be part of on-going staff development?

3/4 **1/4**
 A Major Considerable Some Minor Not
 Part Part Part Part Applicable
 1 2 3 4 5

17. Conducting classroom based research for a sabbatical or release time activity would be an

3/4 **1/4**
 Excellent Very Good Good Not A Not
 Idea Idea Idea Good Idea Applicable
 1 2 3 4 5

18. Compared to other salary the stipend you received for your efforts was

3/4 **1/4**
 Well Above Above Equitable Below Not
 The Norm Norm Applicable
 1 2 3 4 5

19. Conducting seminars/workshops on classroom research for college faculty would be

2/4 **2/4**
 Extremely Very Not Very Not
 Useful Useful Useful Useful Applicable
 1 2 3 4 5

20. The project was

4/4
 Very Well Well Not Very Well Not
 Organized Organized Organized Organized Applicable
 1 2 3 4 5

21. The scope of your project was

1/4 **1/4** **2/4**
 Too Very Not Very Not
 Extensive Extensive Manageable Extensive Applicable
 1 2 3 4 5

22. Time provided to conduct the study was

1/4 **1/4** **2/4**
 More Than Very Less Than Not
 Sufficient Sufficient Sufficient Sufficient Applicable
 1 2 3 4 5

23. The need for clerical assistance is

1/4 **1/4** **2/4**
 Extremely Very Not Very Not
 Important Important Important Important Applicable
 1 2 3 4 5

24. The clerical assistance was

3/4	1/4			
Excellent	Very Good	Good	Not Very Good	Not Applicable
1	2	3	4	5

25. Contact by the project director should have been made

	1/4	3/4		
Much More Frequently	More Frequently	As They Were	Less Frequently	Not at All
1	2	3	4	5

26. One to one consultations with the internal research advisor were

2/4	1/4	1/4		
Extremely Helpful	Very Helpful	Helpful	Not Very Helpful	Not Appropriate
1	2	3	4	5

27. Group meetings should have been conducted

	1/4	2/4		1/4
Much More Frequently	More Frequently	As They Were	Less Frequently	Not at All
1	2	3	4	5

28. The greatest need for assistance in conducting classroom based research is

(Please rank (1 highest, 5 lowest) in order of importance to you what assistance would be of value to you)

_____	Clerical	4-3-2-3
_____	Data Compilation	1-5-4-5
_____	Statistical Treatments	2-1-5-4
_____	Report Preparation	5-2-3-2
_____	Research Design	3-4-1-1

29. What was the most significant part of the study for you?

RESULTS

30. The least significant?

DATA COMPILATION

31. Other comments?

87-7-6

SACRAMENTO CITY COLLEGE
STAFF DEVELOPMENT COMMITTEE
PROJECT APPLICATION

DATES:

PROJECT TITLE Classroom Based Research
Follow Up 1987-88

SUBMITTED	<u>6/1/87</u>
APPROVED	<u>6/9/87</u>
EVALUATED	_____
REPORT FILED	_____

PROJECT COORDINATOR Kirk M. Wiecking

CO-PARTICIPANTS Gene Sellers-Advisor
Robert Carrol-Research Faculty
Del Presscott-Research Faculty
Ron Hatton-Research Faculty

Funded
02750

BEGINNING DATE OF PROJECT July 1, 1987 ENDING DATE Jan 31, 1988

BRIEF DESCRIPTION OF PROJECT OR ACTIVITY SEE ATTACHED

EXPLANATION OF NEED FOR PROPOSED PROJECT OR ACTIVITY

(e.g., What problem will it help remedy: what population will it serve, etc.)

SEE ATTACHED

BRIEF DESCRIPTION OF PROJECT OR ACTIVITY

This project is concerned with conducting three follow-up classroom based research studies originally carried out under a Fund for Instructional Improvement grant 1985-87. The intent of classroom based research is direct faculty participation in research to improve teaching and learning. The purpose of this project is to validate and expand upon studies conducted during Spring 87.

These three studies will investigate, (1) use of the hand held calculator for learning math skills, (2) the use of two different teaching methodologies to teach reading and (3) the use of carefully prescribed study skills activities in a philosophy and logic course to improve student learning outcomes.

EXPLANATION OF NEED FOR PROPOSED PROJECT OR ACTIVITY

Minimum research is conducted in the community college classroom. Review of literature suggests that faculty and students may benefit more from teachers actually doing research instead of reading about research. Also, that faculty, as subject experts, may be the best qualified to determine what techniques or strategies may be most effective in their classrooms. Classroom research provides an opportunity for faculty to measure their effectiveness and to make adjustments based on their own findings. Classroom research adds a new dimension to how faculty may evaluate their own performance and provides them with a useful benchmark for determining their success.

There is a definite need for on-going revitalization of teaching faculty, and conducting classroom research is an exciting way for faculty to seek new challenges that will benefit learners. Perhaps the greatest benefit is faculty become more actively involved in the entire teaching/learning process.

OUTLINE OF GOALS AND OBJECTIVES The primary goal of this project is to improve teaching and learning in the classroom. The specific objectives include: (1) Replication and further validation of three classroom based research studies. (2) SCC faculty experienced in conducting classroom based research who are motivated to continue this activity and will encourage colleagues to try this activity. (3) Development of resource materials as a result of the studies. This material would consist of a description of the project, presentation of data, analysis, suggestions for replication, and narrative on problems and limitations.

METHODS AND PROCEDURES SEE ATTACHED

PROPOSED PLAN OF EVALUTION OF PROJECT OR ACTIVITY Evaluation will be both process and product directed. To evaluate the project, the research advisor and research faculty will be asked to respond to an evaluation instrument developed by the project director to provide feedback on project activities. Results will be included in a final report to the Staff Development Committee. The research faculty will be responsible for providing a mini-paper on their study, which will be presented to the Staff Development Committee in the final report. The research advisor will be required to provide an open ended evaluation on the process and the results of the studies.

METHODS AND PROCEDURES

This project will be conducted using a team approach. In consultation with the staff development officer the project director will function to coordinate project activities and to assist research faculty to carry out their studies. The internal research advisor will assist research faculty with research questions, identification of data to be collected, methods of data compilation, and analysis, interpretation and presentation of results.

From previous experience it is expected that one small group meeting per month will be needed, and individual consultation sessions among the project director, research advisor, and research faculty will be conducted every two to three weeks. Group meetings and individual sessions will provide for monitoring progress of the studies, solving problems, processing information and data, creating status reports.

The end result of the studies will be a series of mini papers which will include a description of the study, explanation of activities, data collected, analysis and interpretation of data, final results and conclusions, information on problems or limitations and suggestions for replication.

**SACRAMENTO CITY COLLEGE
STAFF DEVELOPMENT COMMITTEE
ESTIMATED EXPENDITURES FOR PROPOSED
PROJECT OR ACTIVITY**

PERSONNEL SERVICES

1. Salaries	3 each Research Faculty at 600 each	<u>1800.00</u>
	Robert Carroll, Ron Hatton, Del Prescott	
2. Consultant Fees	1 each Research Advisor at	<u>400.00</u>
	Gene Sellers	
	1 each Project Director at	<u>400.00</u>
	Kirk Wiecking	

OPERATING EXPENSES

1. Supplies	<u>100.00</u>
2. Equipment (including rentals)	<u> </u>

COMMUNICATIONS

1. Telephone	<u> </u>
2. Postage	<u> </u>

TRAVEL

Estimate number of trips, transportation cost, living accommodations, etc.	<u> </u>
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CONFERENCES, WORKSHOPS, ETC.

1. Travel	<u> </u>
2. Registration	<u> </u>
3. Subsistence allowance	<u> </u>
4. Other:	<u> </u>

PRINTING COSTS

Duplicating	<u>50.00</u>
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TOTAL ESTIMATED BUDGET

\$2750.00

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